



288070
58,898/65

COMMONWEALTH OF AUSTRALIA

PATENT SPECIFICATION

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Lodged	14th May, 1965.		

Accompanied by a
Provisional Specification.

Complete Specification
Entitled **IMPLANTATION GUN.**

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Lodged	11th May, 1966.
Accepted	3rd January, 1969.
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Convention Priority -

Applicant **BOOTS PURE DRUG COMPANY (AUSTRALIA)
PTY. LIMITED.**

Actual Inventor **JOHN NICHOLSON.**

Related Art:	228,022(35,242/58)	37.2; 38.1.
	223,184(39,646/58)	37.2.
	215,212(21,139/56)	37.2.

The following statement is a full description of this invention, including the best method of performing it known to US :

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This invention relates to implanters which are used for implanting hormones or medicaments in pellet form in birds or animals.

The invention has been devised to provide an implantation gun having means for automatically metering the number of pellets required for each implantation operation and in which the pellets are fed to the metering means from a replacable pellet magazine.

The implanter comprises a stock, a handgrip on the stock, a hand operated spring retracted lever fulcrumed on the stock, a metering plate slidably mounted on the stock and having a determined number of pellet transfer ports therethrough, said metering plate being connected through a crosshead slide and a journal pin to the upper end of the lever, a breech chamber in the stock, a pellet feed tube connecting the metering plate with the breech chamber, a barrel aligned with said breech chamber incorporating a deflectable pellet arrestor, an implanter plunger slidable in said breech chamber and barrel, said plunger being operatively connected to said lever and a replacable magazine mounted on the stock having a delivery port through which pellets pass to the metering plate.

A preferred embodiment of the invention will now be described with reference to the accompanying drawings in which:

Fig. 1 is a perspective view of the implanter.

Fig. 2 is a section on line 2-2 of Fig. 1.

Fig. 3 is a perspective view of the pellet magazine.

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Fig. 4 is a section on line 4-4 of Fig. 3 and Fig. 5 is a perspective view of the barrel.

As illustrated the stock comprises a body 1 in the form of a substantially rectangular block of transparent material and a body carrier 2. The body has a longitudinal bore 2a which is enlarged at each end as indicated at 3 and 4. A demountable barrel 5 with a piercing end 6 and an enlarged cylindrical end 7 is mounted in the body 1 with the end 7 clamped in the bore enlargement 3 by means of screws 8. The barrel enlargement 7 has a flat 9 thereon and a slot 10 extends from the flat 9 to the barrel bore 11. A lightly loaded spring finger 12 is secured by one end to the barrel as at 13 and the other end of the finger 12 projects forwardly into the barrel bore 11 through the slot 10. The spring finger 12 prevents pellets to be implanted falling out of the barrel 5. The body carrier 2 has one end part 14 projecting into the enlargement 4 where it is retained by screws 15 and another end part 16 constitutes a mounting on which is clamped a handgrip 17.

The top 18 of the body 1 constitutes a slide face and a feed tube 19 in the body extends from top 18 to the bore 2a, preferably at an oblique angle forwardly.

A lever 20 having the upper and lower ends bifurcated is fulcrumed as at 20a to the body carrier 2. The top end of the lever 20 projects above the body 1 and a journal pin 21 in this end passes through a slot in a crosshead slide 22 on one end of a pellet metering plate 23.

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A flexible cable 24 is fixed at one end in a swivel block 25 in the bottom end of the lever 20.

The other end of the cable 24 constitutes the implanter plunger and slides in the bore 2a to eject pellets from the barrel 5. The cable passes through a firm cable guide 26 which has one end fixed in a hole through the handgrip 17 juxtaposed the bottom end thereof. The guide 26 extends in an arc and has its other end fixed to the end part 16 of the body carrier 2.

The metering plate 23 is a rectangular plate mounted on the top 18 of the body 1. A determined number of pellet transfer ports 27 in the plate 23 are located to register, in sequence, with the feed tube 19 in the body 1 as the plate 23 is moved along the top 18.

The replacable pellet magazine 28 consists of a rectangular transparent container 29 having an offset channel yoke 30 whereby it is mounted on the body 1 and clamped thereto by clamping screws and wing nuts 31 and 32. The metering plate is maintained in operative position on the slide face 18 by the yoke 30. A delivery port 33 in the container 29 registers with a pellet loading chamber 34 above the metering plate 23.

A hand and lever guard 35 is provided which extends in an arc between the barrel end of the body 1 where it is attached by a screw 36 and the handgrip 17 to which is attached by a screw (not shown). A spring 37 extends between the guard 35 and a pin 38 on the lever 20 to bias the implanting plunger to the retracted position.

In operation the gun is first inverted so

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that pellets can flow into the chamber 34. Then the gun is turned to operating position leaving a number of pellets in the chamber 34. Next the gun is operated to move the metering plate 23 until the ports 27 are in the chamber 34. A pellet can then fall into each port 27. The metering plate is then allowed to retract under the influence of the spring 37.

During its retracting movement the ports 27 in the metering plate 23 register, in sequence, with the feed tube 19 and the pellets in the ports 27 gravitate through the tube 19 to the bore 2a. The pellets are ejected from the bore 2a in an implanting operation by the implanter plunger as it is advanced by the movement of the lever 20. The pellets as they discharge depress the spring finger 12 which returns to its pellet retaining position as the implanter plunger retracts.

The magazine when full and before mounting on the implanter has its port 33 sealed off. A convenient sealing member is an adhesive strip which is easily removed yet is effective in retaining the pellets in an unmounted magazine.

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The claims defining the invention are as follows:-

1. An implanter comprising a stock, a handgrip on the stock, a hand operated spring retracted lever fulcrumed on the stock, a metering plate slidably mounted on the stock and having a determined number of pellet transfer ports therethrough, said metering plate being connected through a crosshead slide and a journal pin to the upper end of the lever, a breech chamber in the stock, a pellet feed tube connecting the metering plate with the breech chamber, a barrel aligned with said breech chamber incorporating a deflectable pellet arrestor, an implanter plunger slidable in said breech chamber and barrel, said plunger being operatively connected to said lever and a replacable magazine mounted on the stock having a delivery port through which pellets pass to the metering plate. (14.5.65)
2. An implanter as claimed in claim 1 wherein said implanter plunger is operatively connected to said lever by a flexible cable which is slidably mounted in a cable guide attached at one end in said handgrip and attached at its other end to said stock, said cable being attached at one end to said plunger and at the other end to said lever. (14.5.65)
3. An implanter as claimed in claim 2 wherein one end of said cable constitutes said implanter plunger. (14.5.65)
4. An implanter as claimed in claim 1 wherein said metering plate is maintained in operative position on a face of the stock by a yoke on the magazine. (14.5.65)

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5. An implanter as claimed in claim 4 wherein the yoke of the magazine incorporates a pellet loading chamber into which pellets are fed through said magazine delivery port. (14.5.65)

6. An implanter as claimed in any one of claims 1 to 5 wherein there is a spring finger projecting into the bore of said barrel, said spring finger constituting said deflectable pellet arrestor. (14.5.65)

7. An implanter substantially as hereinbefore described with reference to the accompanying drawings. (14.5.65)

DATED THIS 9th day of May 1966.

BOOTS PURE DRUG COMPANY (AUSTRALIA)
PTY. LIMITED,

By their Patent Attorneys,

ARTHUR S. CAVE & CO.

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FIG. 1.

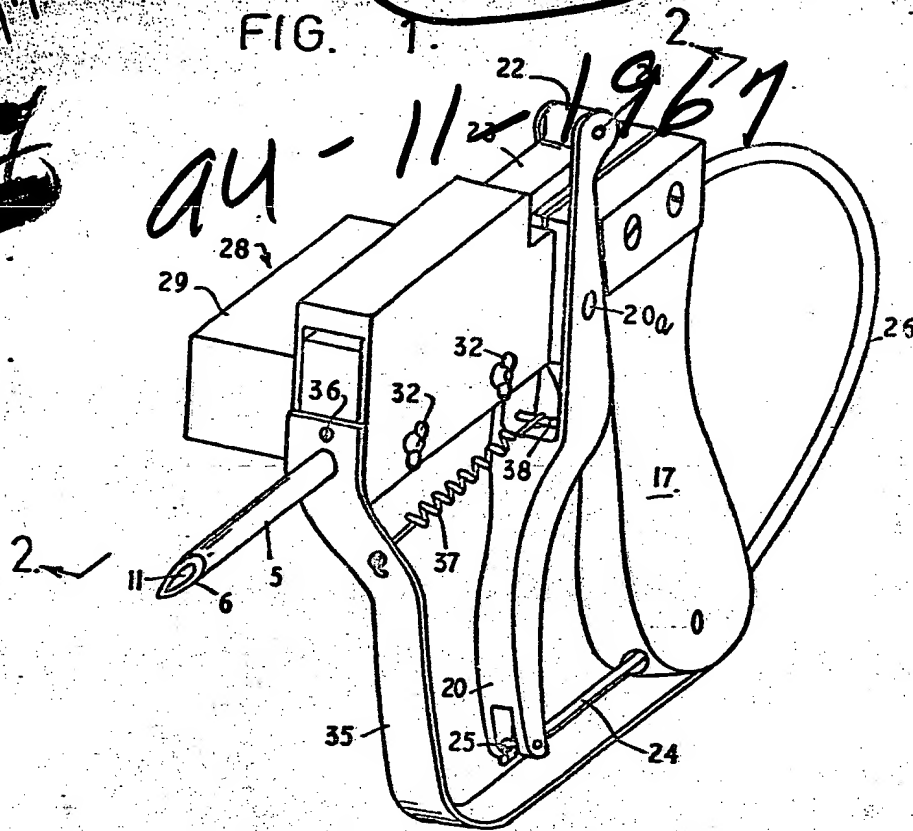
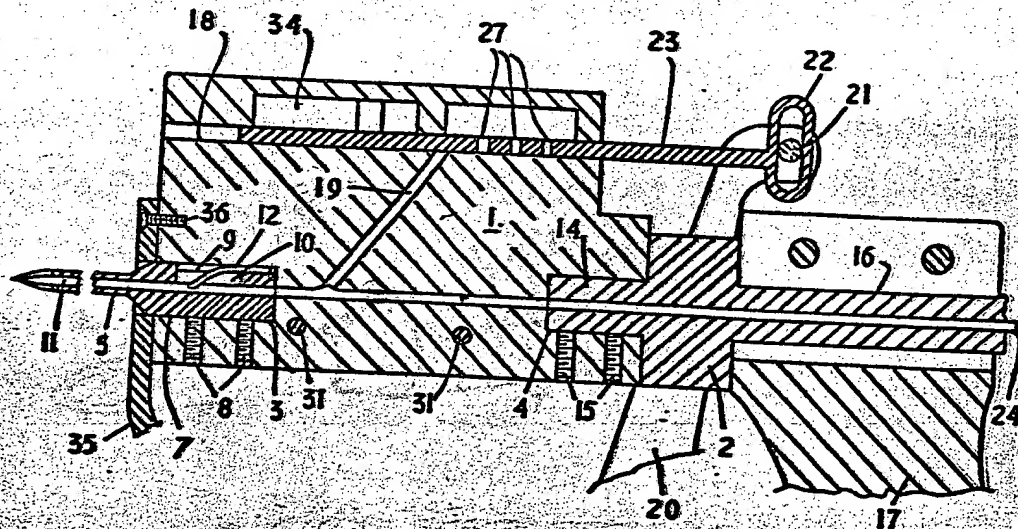


FIG. 2.



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FIG. 3.

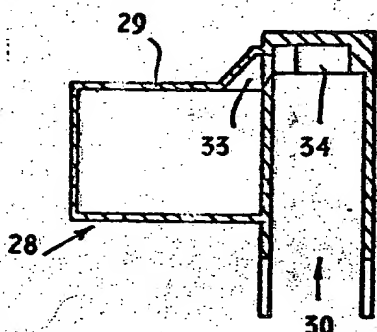
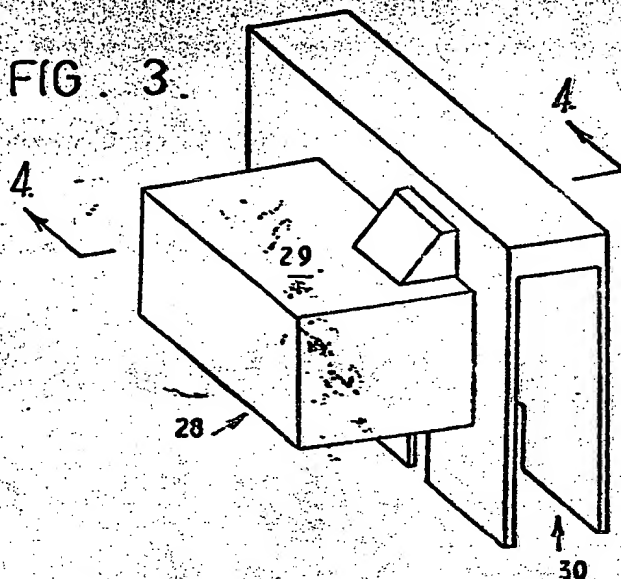


FIG. 4.

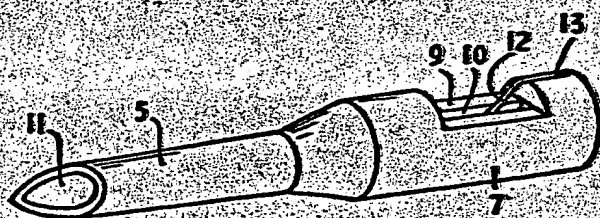


FIG. 5.

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